Workshop: Observing, Modeling, Analysis, and Prediction of Cryosphere Stability

Connecting Science, Scientists, and Society

Overview

The cryosphere, comprising ice sheets, glaciers, sea ice, and permafrost, plays a crucial role in Earth's climate system and global energy exchanges, contributing to equilibrating temperature distributions, regulating oceanic currents, and maintaining the overall stability of the planet's climate. Understanding and predicting the cryosphere's shifts is paramount for assessing its impact on the environment, ecosystems, and human societies. This interdisciplinary workshop aims to bring together scientists from diverse fields including glaciology, mechanics, mathematics, data processing, and economics. This workshop is an attempt to connecting experimentalists, theorists, and policymakers to address the challenges associated with observing, modeling, and analysing this global natural system.

Key Themes

1. **Observational Challenges:** Explore and interface observational techniques such as satellite remote sensing, field measurements, and numerical simulations to monitor and analyse cryospheric changes at various spatial and temporal scales.

2. **Modeling Approaches:** Discuss state-of-the-art modeling frameworks, including ice sheet, glacier flow, and sea ice models to simulate cryospheric processes and assess their stability under changing environmental conditions.

3. **Analytical Methods:** Present novel analytical techniques and mathematical formulations for understanding the complex dynamics of ice

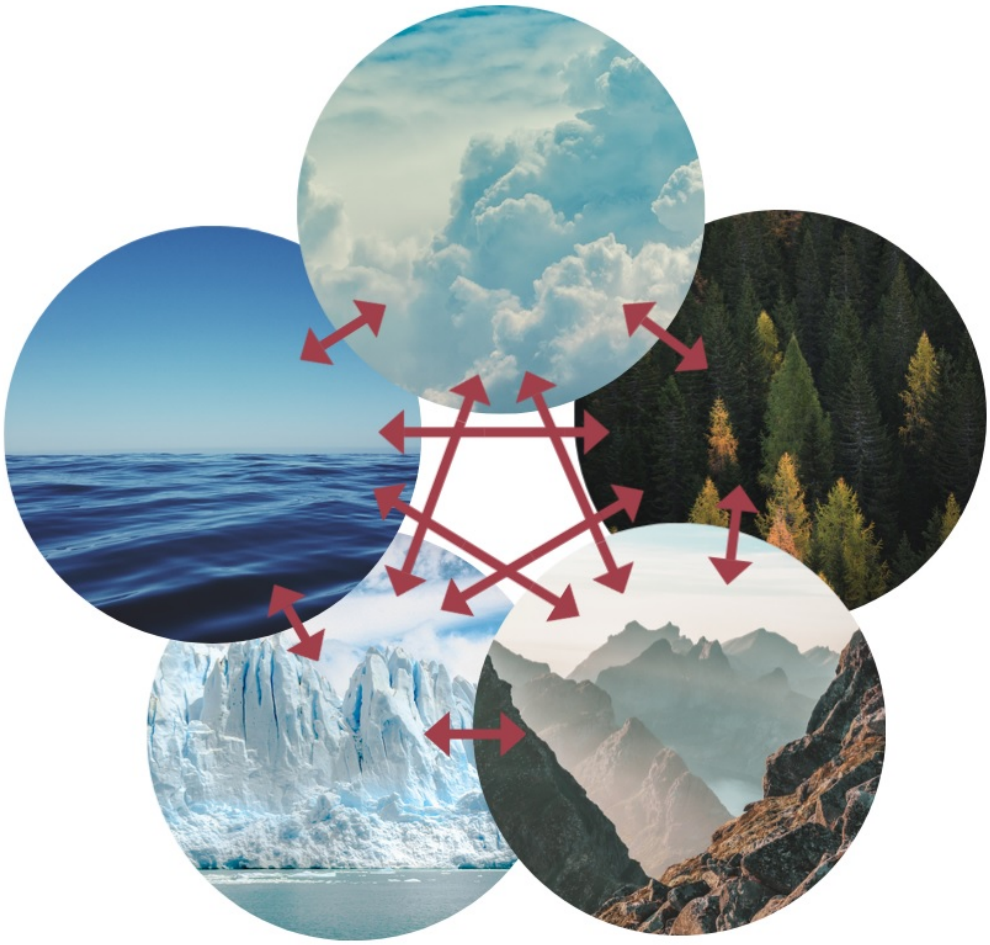

Figure 1: Cryosphere and the climate system: a global perspective, CC BY-SA 3.0, `https://en.wikipedia.org/wiki/Cryosphere`

sheets, glaciers, ice streams, and sea ice, within their interactions with the broader climate system.

4. **Predictive Capabilities:** Evaluate the predictive capabilities of scientific models and assess their reliability in projecting future changes in ice mass balance, sea level rise, and associated climate impacts.

5. **Interdisciplinary Perspectives:** Foster interdisciplinary dialogue and collaboration among scientists, policymakers, and stakeholders to integrate diverse perspectives and expertise in addressing the multifaceted challenges of cryosphere stability.

Objectives

- Provide a platform for researchers to present their latest findings, methodologies, and technological innovations related to cryosphere stability.
- Facilitate discussions on emerging research topics, unresolved questions, and future directions in cryospheric science and climate modeling.
- Identify synergies between different scientific disciplines and foster interdisciplinary collaborations to address complex challenges in cryosphere stability.
- Engage policymakers and stakeholders in discussions on the implications of cryospheric changes for environmental policy, resource management, and societal adaptation strategies.

Target Audience

- Glaciologists and polar scientists
- Geophysicists and climate modelers
- Mathematicians and statisticians
- Data scientists and remote sensing experts
- Economists and policymakers
- Environmental engineers and hydrologists
- Graduate students and early-career researchers

Format

The informal workshop will feature keynote presentations, contributed talks, poster sessions, panel discussions, and interactive working groups. Participants will have the opportunity to exchange ideas, collaborate on interdisciplinary research projects, and establish networks for future collaborations.

Date and Venue

The workshop will be held in Grenoble [2024]. Participants can choose to attend in person or remotely, with live streaming and interactive online sessions available for remote participants.

Call for Contributions

Researchers and practitioners are invited to submit abstracts for oral presentations, poster presentations, and workshop proposals on topics related to the workshop's topics. Submissions should address one or more of the key themes outlined above and contribute to advancing our understanding of cryospheric processes and their implications.

Registration

Registration for the workshop will open [soon]. Early registration is encouraged to secure participation and take advantage of discounted rates. Details on registration fees, deadlines, and payment methods will be provided on the workshop website.

Organising Committee

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Contact Information

For inquiries and further information, please contact the organisers.

Stay Connected

Follow us on our dedicated platform for updates and announcements regarding the workshop.

Acknowledgments

This workshop is supported by [funding agencies and sponsors].

We look forward to welcoming you to the workshop on Observing, Modeling, Analysis, and Prediction of Cryosphere Stability!